

## NEW DESCRIPTIONS

### TWO NEW SPECIES OF THE GENUS *APANTELES* FOERSTER (HYMENOPTERA: BRACONIDAE) FROM INDIA<sup>1</sup>

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(With two text-figures)

Two new species, *Apanteles shirii* sp. nov. and *Apanteles endii* sp. nov., are described. The former is a parasitoid on *Erias vitella* (Stoll.) and the latter on *Achea janata* Linn.

#### INTRODUCTION

The genus *Apanteles* was erected by Foerster in 1862 and has since been studied by several authors (Marshall 1885, Muesebeck 1920, Wilkinson 1928a, b; Watanabe 1937, DeSaeger 1943, Nixon 1967). These workers did not consider the division of the genus into subgenera but Muesebeck (1920) synonymised 6 genera and one subgenus. Wilkinson (1932) divided the genus into five groups, namely M, A, F, U, and S. Nixon (1965) divided the genus into 42 species groups. Some of these groups are very large *ater*, *ultor*, etc. Rao (1961) divided the genus into two subgenera, i.e. *Areolatus* and *Carinatus* using propodial areola as a main, valid, and important character. But very recently, Mason (1981) kept *ater*, *taeniaticornis*, *mycetophilus*, *trifasciatus*, *coesor* and *gradiculus* groups of Nixon under the genus *Apanteles*. He also included most of the species of *Metarpalis* group into *Apanteles*. Following the reclassification by Mason only 40% among the old *Apanteles* species remained under the genus while the rest were placed under different genera. Other workers on Indian species are Lal (1942), Bhatnagar (1948), Sathe and Inamdar

(1988), Sumodan and Sevichan (1989), Sumodan and Narendran (1990).

The type materials are in the collection of T.V. Sathe, Dept. of Zoology, Shivaji University, Kolhapur and will be deposited in the collection of Zoological Survey of India, Calcutta.

#### *Apanteles endii* sp. nov. (Fig. 1)

**FEMALE:** Length 1.80 mm without ovipositor, forewing 1.40 mm long, antenna 1.29 mm long.

**Head** (Fig. 1-a): In dorsal view, 0.26 mm long and 0.33 mm broad; interocellar space 0.09 mm long, eyes 0.10 mm broad and 0.14 mm long, interorbital space 0.08 mm long, frons shiny, ocelli in triangle. Antenna (Fig. 1-b) shorter than body, 16 segmented, 1.29 mm long, base of antenna 0.04 mm broad; clypeus 0.06 mm long, mandibles 0.04 mm long and 0.2 mm broad.

Flagellar formula: 2 L/W=2.50, 14 L/W = 2.50, L 2/14=2.0, W =2/14 = 2.0.

**Thorax:** Thorax 0.92 mm long, mesoscutum punctate with few punctures, mesonotum rugose, metanotum with a pair of setose lobe laterally; Precoxal suture present; Propodeum without areola, rugose, (Fig. 1-c) median carina short, transverse carinae not so

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prominent, lateral carinae joins with each other at anterior. Forewing (fig. 1-d) 1.40 mm long and 0.62 mm broad; costa 0.75 mm long and 0.12 mm broad, stigma 0.25 mm long; median cell 0.56 mm, basal 0.24 mm, discoideus 0.26 mm, transverse cubitus 0.12 mm and 1st abscissa of radius 0.15 mm, other cells not clearly observed. Hind wing: (Fig. 1-e) hind wing 1.20 mm long and 0.38 mm broad, subcostella 0.20 mm long and 0.15 mm broad. Hind leg (Fig. 1-f) 1.59 mm long; coxa 0.22 mm long and 0.14 mm broad, trochanter 0.15 mm long and 0.05 mm broad; femur 0.31 mm long and 0.07 mm broad, tibia 0.41 mm long and 0.06 mm broad, tibial spurs 0.08 mm long and 0.02 mm broad and equal; tarsus 1st 0.18 mm long, 2nd 0.09 mm long, 3rd 0.08 mm long, 4th 0.07 mm long, 5th 0.05 mm long; claw 0.03 mm long, tibia and tarsus shiny; coxa, trochanter, femur brown; claw pointed.

**Abdomen** (Fig. 1-g): 0.62 mm long and 0.36 mm broad, ovipositor sheath 0.64 mm long and 0.04 mm broad; ovipositor 0.29 mm long, 0.03 mm broad, dark, broad at the base; sheath shiny, brown; Hypopygium without folds, 0.28 mm long, 0.35 mm broad; tergite I light brown, apically smooth, basally rugosopunctate, barrel shaped, II tergite rugosopunctate throughout; light brown; wider than long, 0.24 mm long, 0.35 mm broad. 1st & 3rd tergites longer than 2nd but equal in length.

**Colour:** Antenna, I and II tergite, light brown; mouth parts, segmental joints of antenna, leg except coxa, abdomen, ovipositor dark brown; head, abdomen black.

**MALE:** Similar to female.

**Host:** Lepidopterous larvae, *Achea janata*.

**Holotype:** FEMALE, M.S.; India, Medshingi, Tq. Sangola, polyphagus pests, coll. D.M. Ingawale from Aug. to Nov. 90; antenna, legs, wings on slide, labelled as above.

**Paratype:** 30 females and 12 males, sex-

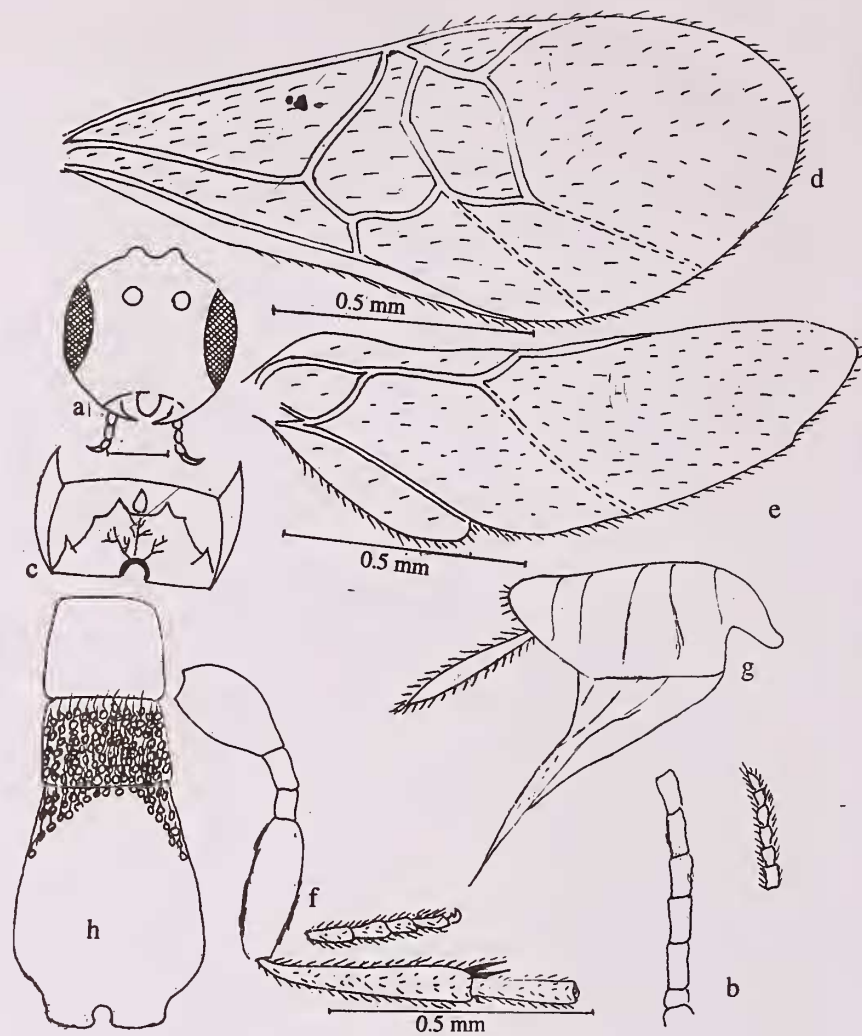


Fig. 1. *Apanteles endii* sp. nov.

a. Head; b. Antenna; c. Propodeum; d. Forewing; e. Hind wing; f. Hind leg; g. Abdomen; h. Tergite.

ratio, (m:f) 1:2.50. Coll. data same as of holotype.

#### DISCUSSION

*Apanteles endii* sp. nov. resembles *Apanteles cama* in Nixon's (1965) key by the following characters:

1. Propodeum flat, 2. Hind leg longer than body and slender; 3. Vennal lobe hairy and convex.

The species also resembles *Apanteles cirphicola* Bhatnagar in Rao's (1961) key by the following characters:

1. Propodeum without areola and 2. tergite II not smooth.

However it differs from the above species in having:

1. ovipositor sheath longer than ovipositor; 2. tergite III longer than II; 3. antenna shorter than



body; 4. radius meeting to intercubitus at about  $135^\circ$ ; 5. propodeum with short median carina, lateral carinae joined apically; 6. tibial spurs equal and 7. Flagellar formula:

$$2 L/W = 2.50, 14 L/W = 2.50$$

$$L 2/14 = 2.00, W 2/14 = 2.00$$

*Apanteles shrui* sp. nov.  
(Fig. 2)

**FEMALE:** Female 2.57 mm excluding ovipositor, forewing 2.20 mm long, antenna 1.72 mm long and 16 segmented.

**Head** (Fig. 2-a): Head in dorsal view rectangular, dark brown; eyes 0.16 mm broad and 0.36 mm long; interocellar distance 0.15 mm and equal to interocellar space; ocelli in triangle; mandibles strong, pointed, basal width of mandible 0.03 mm and 0.07 mm long; malar space 0.08 mm; clypeus 0.12 mm long. Antenna (Fig. 2-b) 1.57 mm long with three ranks of placodes, 16 segmented.

Flagellar formula:

$$2 L/W = 2.25, 14 L/W = 1.666, L 2/14 = 2.0, W 2/14 = 1.33.$$

**Thorax:** 0.96 mm long, 89 mm broad; mesonotum deeply punctured posteriorly; metanotum with a pair of setiferous projections, cetose lobe sublaterally; propodeum with incomplete, deeply punctate with strong hairs & horizontal and transverse carinae, areola absent, anteriorly carinae some what 'U' shaped. Forewing (Fig. 2-c) 2.20 mm long, stigma 0.39 mm long, metacarpus 0.55 mm; discoidal cell area 0.29 mm, medius cell area 0.80 mm, subdiscoideus 0.45 mm long; II brachial, discoidal cell, III cubital cell area not clearly seen; median 0.78 mm long. Hind wing (Fig. 2-d) 1.80 mm long, costa 0.72 mm long and other area not clearly observed in it, vernal lobe hairy and convex. Hind leg (Fig. 2-e) 2.83 mm long, coxa 0.42 mm long and 0.24 mm broad,

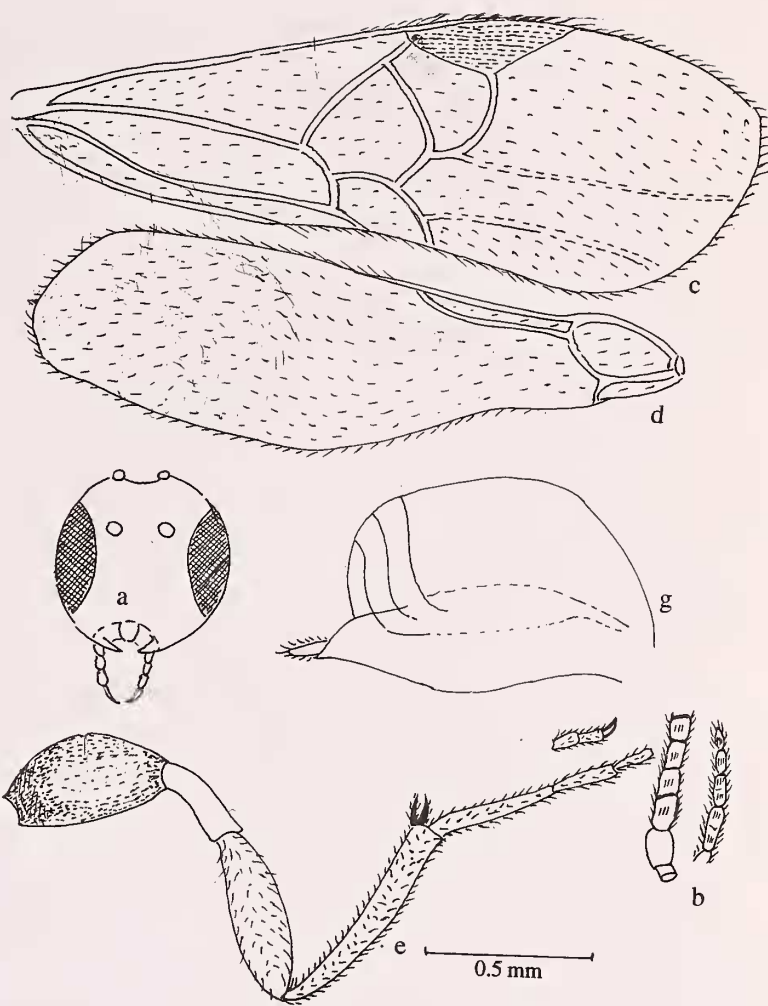


Fig. 2. *Apanteles shrui* sp. nov.  
a. Head; b. Antenna; c. Forewing; d. Hindwing; e. Hind leg; g. Abdomen.

trochanter I and II 0.25 mm long and 0.7 mm broad, femur 0.50 mm long and 0.14 mm broad, tibia 0.71 mm long and 0.10 mm broad; tibial spurs equal, hairy, 0.07 mm long and 0.02 mm broad; tarsus 0.95 mm long and hairy; claw pointed, bended at the point.

**Abdomen** (Fig. 2-g): 0.95 mm broad and 0.65 mm long, light brown, petiole pointed; tergite I much longer than wide, rugose all over, strongly tapering apically, IIInd tergite wider than long, sculptured, IIIrd tergite much longer than IIInd; ovipositor 0.10 mm long and 0.04 mm broad, hairs absent, ovipositor shiny and yellow-brown.

**Colour:** Black, antenna; tibia, femur, abdomen brown; ovipositor, light brown.

**MALE:** Similar to female.

**Host:** Lepidopterous larvae, *Erias vitella* (Stoll.)

**Cocoon:** Faint yellow, cottony, 3.20 mm long.

**Holotype:** FEMALE, INDIA, Medshingi, Tq. Sangola, *Erias vitella* (Stoll.), coll. D.M. Ingawale from Aug. to Nov. 1990; antenna, legs, wings on slides labelled as above.

**Paratype:** 44 females and 20 males, sex ratio (m:f) 1:2.20, coll. data same as of holotype.

#### DISCUSSION

*Apanteles shrui* sp. nov. resembles *Apanteles sesamiae* Cameron in Rao's (1961) key by:

1. mesonotum punctured and 2. IInd tergite sculptured.

It also resembles *Apanteles numenes* in Nixon's (1967) key by having the: a. 1st tergite rugose and b. colour of antenna and ovipositor. However, it differs from the above species by:

1. propodeum with incomplete horizontal and transverse carinae, anterior carina 'U' shaped; 2. hind leg longer than antenna and tibial spurs equal; 3. antenna with three ranks of placodes; 4. tergite I rugose all over; 5. costa and stigma as long as broad; 6. Flagellar formula:

$$2 L/W = 2.25, 14 L/W = 1.66$$

$$L 2/14 = 2.00, W 2/14 = 1.33$$

#### ACKNOWLEDGEMENT

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